

## Patent claims

1. A device (1) for processing, in particular evaporating samples in sample vessels (20) provided with at least one filling opening (21),  
  
with holding means (2) for holding several sample vessels (20),  
  
with optional heating means (3) for heating the samples contained in the sample vessels (20),  
  
and with means (4) for producing a vacuum,  
  
characterised in that the device (1) comprises connection means (6, 7, 8) connectable to the filling openings, by way of which the sample vessels (20) individually or in groups are gas-tightly connectable to a connection (5) of the means (4) for producing a vacuum and by way of this may be evacuated.
2. A device according to claim 1, characterised in that the device (1) comprises drive means (22, 23, 24) for producing a vortex movement, and that the connection means (6, 7, 8) are designed in a manner such that the holding means (2) and the sample vessels (20) are movable independently of the means for producing a vacuum, that in particular the connection means (6, 7, 8) comprise flexible components (7).
3. A device according to one of the claims 1 or 2, characterised in that the connection means comprise at least one connection plate (6) which is sealingly pressable onto the

filling openings (21) of the sample vessels (20), or is suctioned by the vacuum, and which is provided with connection paths (10, 11) for connecting the filling openings (21) to the connection (5) of the means for producing a vacuum.

4. A device according to claim 3, characterised in that the connection plate (6) comprises longitudinal channels (10) which extend from the lower side, able to face the sample vessels (20), of the connection plate (6) and which are placeable aligned onto the filling openings (21).
5. A device according to claim 4, characterised in that the longitudinal channels (10) extend through the connection plate (5) up to the upper side (13) distant to the lower side (14), wherein the upper side is provided with at least one deepening (11) which communicates with the longitudinal channels (10).
6. A device according to claim 5, characterised in that between the exit opening (34) of the longitudinal channels (10) and the deepening (11) there are formed obstacles which prevent the flowing back of condensate into the sample vessels (20), that in particular the level of the exit opening lies above the level of the base of the deepening (11).
7. A device according to claim 6, characterised in that the connection plate (6) comprises a connection opening (9) which communicates with a deepening (11) and which is connectable or connected to the connection (5).
8. A device according to one of the claims 6 or 7, characterised in that the connection means comprise a sealing plate

(8) which for sealing the deepening (11) is placeable onto the connection plate (6).

9. A device according to claim 8, characterised in that the sealing plate (8) is designed heatable, and that the sealing plate (8) is manufactured of a transparent material, in particular of glass.
10. A device according to one of the claims 8 or 9, characterised in that the sealing plate (8) and/or the connection plate (6) comprise aligning means (15) for centering and firmly holding the connection plate (6) with respect to the holding means (2). *B*
11. A device according to one of the claims 1 to 10, characterised in that the holding means (2) and/or the connection means (6, 7, 8) are adaptable to a differing number and size of sample vessels (20), in particular are exchangeable.
12. A method for processing, in particular for evaporating samples held in several sample vessels (20), in particular with a device (1) according to one of the claims 1 to 11,

in which method the samples are heated in the sample vessels (20) and in which the sample vessels (20) are preferably moved, characterised in that the filling openings of the sample vessels (20) individually or in groups are gas-tightly connected to means for producing a vacuum, and with this are evacuated.

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